

WHAT IS CLAIMED IS:

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1. A semiconductor photo detecting device,
comprising:

a semiconductor substrate having a flat
side face; and

10 a photo absorption layer formed on said
semiconductor substrate,

wherein

an entire part of said flat side face is
inclined to a line perpendicular to a principle
15 plane of said semiconductor substrate; and

said flat side face is substantially
perpendicular to an incoming photo signal.

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2. The semiconductor photo detecting
device as claimed in claim 1, wherein said flat side
face is a cleavage face of said semiconductor
25 substrate.

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3. The semiconductor photo detecting
device as claimed in claim 1, wherein said
semiconductor substrate has another side face
parallel to said flat side face.

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4. The semiconductor photo detecting
device as claimed in claim 1, wherein said
semiconductor substrate is a III-V group compound
semiconductor substrate, and said flat side face is
5 one of a (110) plane and a (111) plane.

10 5. The semiconductor photo detecting
device as claimed in claim 1, wherein said flat side
face is inclined to a line perpendicular to said
principle plane at an angle of 30° or less.

15 6. The semiconductor photo detecting
device as claimed in claim 4, wherein said principle
20 plane is inclined to a (100) plane of said
semiconductor substrate.

25 7. The semiconductor photo detecting
device as claimed in claim 1, wherein said side face
is covered by an anti-reflection film.

30 8. The semiconductor photo detecting
device as claimed in claim 1, wherein said photo
35 absorption layer is formed in a range in which a
perpendicular line to said flat side face crosses.

9. The semiconductor photo detecting
5 device as claimed in claim 1, further comprising,
a first cap layer formed on said photo
absorption layer; and
an ohmic electrode formed on said cap
layer.

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10. The semiconductor photo detecting
15 device as claimed in claim 1, further comprising:
a cap layer formed on said photo
absorption layer; and
a second conduction type region formed in
a part of said photo absorption layer and said cap
20 layer,
wherein
said photo absorption layer and said cap
layer are a first conduction type; and
said photo absorption layer is formed in a
25 range in which a perpendicular line to said flat
side face crosses.

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11. A manufacturing method of a
semiconductor photo detecting device, comprising,
a step of forming semiconductor layers
including a photo absorption layer on an inclined
35 semiconductor substrate,
a step of forming semiconductor photo
detecting devices including said photo absorption

layer by patterning said semiconductor photo
detecting devices in multiple parts of said inclined
semiconductor substrate,

- 5 a step of dividing said semiconductor
substrate into multiple semiconductor photo
detecting devices having one or more pairs of
cleavage faces by cleaving said semiconductor
substrate, and,

- 10 a step of forming an anti-reflection film
on said cleavage faces.